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EXAMINER KASTURE, DNYANESH G				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,628

Applicant(s)

WINKLER ET AL.

Examiner

DNYANESH KASTURE

Art Unit

3746

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 and 38-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 and 38-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Paper No(s)/Mail Date _____
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 January 2010 has been entered.

Claim Objections

2. In Re Claim 2, the phrase "laser-welded join" should be "laser-welded joint" to be in proper idiomatic English.
3. Claim 23 is objected to under 35 USC 112, 4th paragraph for its failure to specify a further limitation of subject matter claimed. All the limitations listed presently in Claim 23 are already incorporated in its parent Claim 1.
4. Claim 22 is objected to for improper syntax: "which magnet is offset" should be "said magnet is offset".
5. Claim 28 is objected to for improper syntax: "which tube comprises" should be "said tube comprises".
6. Claim 34 is objected to for improper syntax: "which depression forms" should be "said depression forms"

7. Claim 38 is objected to for improper syntax: "which outside diameter corresponds" should be "said outside diameter corresponds"

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-36, 38-44 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. In Re Claim 1, "rotor shaft adjacent its free end" lacks antecedent basis for the "free end". It is suggested that the phrase "wherein the rotor shaft comprises a free end" that is currently in Claim 10 be transferred to Claim 1, and the phrase "said free end" be included in claim 10. Similar changes need to be made in Claims 33, 34, 41 and 44.
11. In Re Claim 5, "in the flange" lacks antecedent basis in Claim 2.
12. In Re Claim 19, "the bearing arrangement" lacks antecedent basis, it is suggested that the phrase "the sintered bearing" be used instead.
13. In Re Claims 23 and 24, "said lubricant moving surface" lacks antecedent basis. It appears that applicant is referring to the "lubricant transporting surface" of claim 1.

14. In Re Claim 26, the gap (116, 314) has already been defined in Claim 1 using different claim language ("inwardly protruding portion" instead of "rotor side end of the bearing tube"), thereby making the claim indefinite.

15. In Re Claim 34, "a bearing for the shaft" is indefinite because "a thrust bearing" as stated in Claim 1 is the same. It is suggested that the phrase "a bearing for the shaft" be modified to -- said thrust bearing for the shaft --.

16. In Re Claim 43, "an axial bearing for the shaft" is indefinite because "a thrust bearing" as stated in Claim 1 is the same. It is suggested that the phrase "an axial bearing for the shaft" be modified to "said thrust bearing for the shaft".

17. In Re Claim 44, "a resilient latching member" should be -- said resilient latching member --, since the latching member has already been stated in Claim 1.

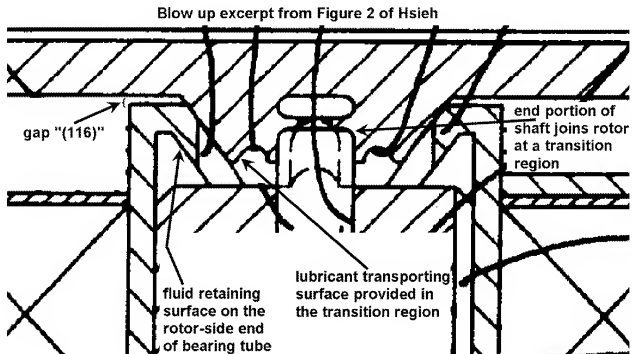
18. In view of the above claim deficiencies, the applicant is advised to review all the claims again to ensure proper syntax and ensure compliance with 35 USC 112.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 1, 12, 23 - 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1)



21. In Re Claim 1, with reference to Figure 2 and its excerpt annotated above, Hsieh discloses a mini-fan (title) that comprises: a drive motor having an external rotor (12) and an internal stator (14), the external rotor being equipped with a rotor shaft (126) that has a necked-down portion (127) adjacent its free end (128, see Column 2, Line 62); a thrust bearing (106) cooperating with said free end; a bearing tube (18) on whose outer side the internal stator (14) is mounted as depicted, and in whose interior is arranged a bearing (16) in which the rotor shaft (126) is rotatably supported, said bearing tube having a rotor-side end (annotated above) and a bearing-side end (opposite the rotor-side end), close to said thrust bearing as depicted; a closure

arrangement (104, 19) that closes off the bearing tube (18) in a liquid-tight manner (securely mounted by pressing, see Column 2, Lines 38-39) at its bearing-side end, and is equipped, adjacent the necked-down portion (127) of the rotor shaft (126) with at least one resilient radially movable latching member (192, it is radially movable and resilient because the central hole deforms and enlarges thereby increasing its radius when the shaft is inserted – see Column 3, Line 5), acting as a detent (the central hole will rebound - see Column 3, Line 8), for engaging into that necked-down portion (“be held in the neck”, Column 3, Line 9) of the rotor shaft (126) without disturbing normal operation of said rotor shaft as depicted in the assembled apparatus; an end portion of the shaft being joined to the rotor at a transition region (as annotated above);

- a lubricant transporting surface (as annotated above) being provided in said transition region and inside the bearing tube, and extending in a direction away from the shaft and toward the inside of the bearing tube as depicted;
- the rotor-side end of the bearing tube being provided with a fluid retaining surface (as annotated above) protruding inwardly in a direction away from the inside of the bearing tube and towards said shaft and arranged for retaining, within the bearing tube, lubricant transported in operation by the lubricant transporting surface towards the inside of said bearing tube: The arrows in Figure 4 adjacent the lubricant transporting surface indicate that the lubricant is directed towards the inside wall of bearing tube, and the inclination of the fluid retaining surface insures retention of the lubricant within the bearing tube;

- a gap (annotated as gap "116" in the excerpt above) being defined, extending between the rotor-side end of the bearing tube and the rotor as is clear from the excerpt above, the gap clearly does not provide hindrance to the insertion and removal of the shaft (126) in and out the bearing (16)

22. However, Hsieh does not disclose that the bearing (16) is a "sintered" bearing.

23. Nevertheless, Fujinaka discloses an oil impregnated sintered bearing (Abstract) used in a motor (title) that rotatably holds a shaft fixed to a rotor.

24. It would have been obvious to a person having ordinary skill in the art at the time of the invention to select a sintered bearing as taught by Fujinaka as the lubricating bearing (16) of Hsieh because of the self lubricating property of sintered bearings. If the selection leads to anticipated success, it is likely the product of ordinary skill and common sense and not the product of innovation.

25. In Re Claim 12, the resilient latching member (192) of Hsieh does not touch the shaft and protrudes into the necked down portion as depicted.

26. In Re Claim 23, Hsieh as applied to Claim 1 discloses all the claimed limitations.

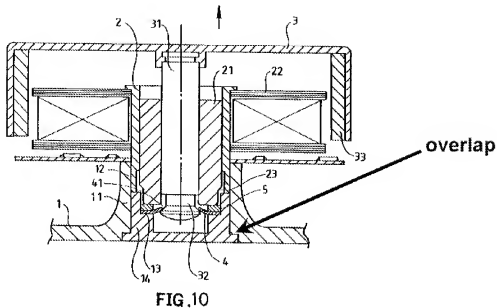
27. In Re Claim 24, the lubricant transporting surface discussed in claim 1 reads on the lubricant moving surface, It is formed in an undercut fashion as depicted.

28. In Re Claim 25, the inwardly protruding portion is the element of Hsieh that has the fluid retaining surface.

29. In Re Claim 26, the gap "116" is discussed in claim 1. The size of the gap that minimizes escape of lubricant would be obvious to one of ordinary skill in the art because it has been held that discovering the optimum value of a result effective variable (gap) involves only routine skill in the art (MPEP 2144.05 (II-B)).

30. In Re Claim 27, the protruding portion of Hsieh is formed in an undercut fashion as depicted.

31. Claims 2, 3, 15, 16, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Homg (US Patent 6,498,412 B2) and further in view of Joachimi et al (PG Pub US 20030130381 A1)



32. In Re Claim 2, Hsieh modified by Fujinaka as applied as applied to Claim 1 discloses the closure arrangement as the casing (102 of Fujinaka) that has a closure arrangement implemented as a cover (flange associated with 104 of Fujinaka). However Hsieh modified by Fujinaka does not disclose that the cover is made of thermoplastic that is at least partially transparent to laser light and attached by a substantially liquid tight laser welded joint.

33. Nevertheless, with reference to Figure 10, Horng discloses a mini-fan (Column 2, Lines 49-50 state: "The casing 1 can be any conventional casing for a motor or heat dissipating fan") that comprises:

- a drive motor (Figures 7, 8, 10) having an external rotor (3) and an internal stator (22), the external rotor being equipped with a rotor shaft (31) that has a necked down portion (32) adjacent its free end (spherical distal end);
- a bearing tube (2) on whose outer side the internal stator is mounted as depicted,

and in whose interior is arranged a bearing arrangement (21) in which the rotor shaft is rotatably supported (Column 2, Line 60 states: "...for rotatably holding a shaft");

- a closure arrangement implemented as a cover (14) that closes off the bearing tube in liquid-tight fashion at one end (space 23 is for lubricating oil, so the closure arrangement would have to be liquid tight to avoid leaks, further, Column 2, Line 54 states: "plug 14 may be provided to seal an end"), and is equipped adjacent the necked down portion of the rotor shaft (as depicted) with at least one resilient radially movable latching member (4) acting as a detent that engages into that necked down portion of the rotor shaft and, without disturbing normal operation of said rotor shaft, secures the rotor shaft against being pulled out of the bearing arrangement (Figure 8 shows the securing member extending into the necked down portion).

34. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the casing (102) of Hsieh to incorporate the plug (14) of Horng for the purpose of easy access to the lubricating oil reservoir.

35. Note that Fujinaka discloses in Paragraph [0037] that cap (9) of the motor is welded to boss (2) in a "substantially" liquid tight weld join (surface tension seal – Paragraph [0038]). It would have been obvious to a person having ordinary skill in the art at the time of the invention to join the cover (14) of Horng to the casing (102) of Hsieh by welding as taught by Fujinaka for the purpose of forming a surface tension seal as stated by Fujinaka.

36. Hsieh modified by Horng and Fujinaka discloses all the claimed limitations except for the material of the cover being a thermoplastic that is at least partially transparent to laser light.

37. Nevertheless, Joachimi et al discloses in Paragraph [0007] that thermoplastics materials are largely transparent or laser-translucent over a certain wavelength range.

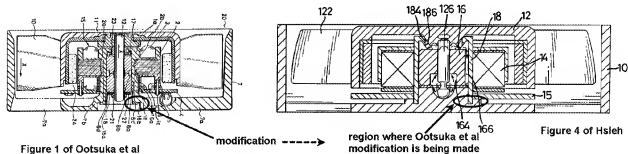
38. It would have been obvious to a person having ordinary skill in the art at the time of the invention to make the closure arrangement of Horng of thermoplastic material that is transparent to laser light as taught by Joachimi et al because it is suitable for laser welding as stated by Joachimi et al in Paragraph [0007]: "...lasers that are normally used for thermoplastics welding..".

39. In Re Claim 3, as annotated in Figure 10 of Horng depicted above, the part of the housing adjacent to bottom portion of the cover (14) reads on a flange, and the step indent in the flange overlaps the lip in the cover in the region annotated "overlap". Further, Fujinaka discloses in Figure 5 that boss/flange (2) contacts the cap/cover (9) at the lower end and is welded thereat, therefore one of ordinary skill would have welded the cover of Horng to the flange at the portion of overlap which is also at the lower end.

40. In Re claims 15 and 16, Horng discloses that the closure arrangement is a plug that abuts the bearing tube at its opening as depicted, and in a liquid tight manner as discussed earlier. Hsieh teaches that the closure arrangement (casing) has a projection that protrudes into the opening of the bearing tube.

41. In Re claim 28, as depicted in Figure 7 of Horng, in the vicinity of space (23), the tube (2) has a slightly higher inside diameter where the plug is received than the rest of the tube all the way to the top end, and it would be obvious to make this modification to the Hsieh tube for the purpose of providing added space for storing oil as stated in Column 2, Lines 62-63: "... gap 23 therebetween that serves as a space for storing oil ..."

42. Claims 4, 5, 7-9, 17 - 19, 29 - 33, 35, 36, 38 - 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Horng (US Patent 6,498,412 B2) and Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A)



43. In Re claim 4, Hsieh, Horng, Fujinaka and Joachimi et al as applied to claim 2 disclose all the claimed limitations except for the bearing tube being held between the closure arrangement and a portion of the flange.

44. Nevertheless, with reference to Figure 1 depicted above, Ootsuka et al discloses a lip at the end (8c') of the bearing holding part that is welded to a recess in part (16).

45. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the end of the bearing tube of Hsieh so it has a lip as taught by Ootsuka et al, and to form a corresponding recess as taught by Ootsuka et al in the flange section of the housing of Hsieh resulting in the bearing tube being held between the flange and the closure element (Horng modification), for the purpose of increasing the engaging strength between the bearing tube and the flange.

46. In Re claim 5, Ootsuka et al discloses a lip at the end (8c') of the bearing holding part is welded to a recess in part (16), a weld can be made liquid tight as discussed above.

47. In Re claims 7, 8, 9 Horng modified Ootsuka et al disclose the radial projection (implemented as a flange) is provided at the end of the tube positively engaged between the closure arrangement and flange as suggested by the combination of the elliptically annotated inserts in the figures above.

48. In Re claim 17, Ootsuka et al discloses the lip which is an annular ridge and the recess which is the annular groove that are in a latching connection as depicted. The transition point can also be read as the weld discussed in claim 5. The weld in itself could be read as the groove/ridge combination.

49. In Re claim 18, as depicted in Figure 7 of Horng, in the vicinity of space (23), the tube (2) has a slightly higher inside diameter where the plug is received than the rest of the tube all the way to the top end, and it would be obvious to make this modification to the Hsieh tube for the purpose of providing added space for storing oil as stated in Column 2, Lines 62-63: "... gap 23 therebetween that serves as a space for storing oil ..".

50. In Re claim 19, Ootsuka et al discloses the portion that protrudes away is the ridge/lip installed in an opening/recess part.

51. In Re claim 29, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to claims 3, 5 and 7 discloses all the claimed limitations.

52. In Re claim 30, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to Claims 5 and 29 disclose all the claimed limitations.

53. In Re claim 31, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to Claims 7 and 29 disclose all the claimed limitations.

54. In Re claim 32, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to Claims 2 and 29 disclose all the claimed limitations.

55. In Re claim 33, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to Claims 1 and 29 disclose all the claimed limitations.

56. In Re claim 35, Hsieh, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to claims 5 and 28 disclose all the claimed limitations (constriction reads on the reduced diameter portion).

57. In Re claim 36, Fujinaka discloses in Paragraph [0057] that the outer wall of the bearing and inner wall of the boss is protected from scratching, therefore suggesting a better machined surface over the area of contact between the bearing and the boss before they are press fit (Paragraph [0058]). Further, Paragraph [0056] discloses a slightly greater inner diameter grooved wall. The surface finish is therefore worse for the greater inner diameter wall because of the grooves.

58. In Re claim 38, Fujinaka discloses in Figure 8 that the bearing (3) has a portion with an enlarged outside diameter, corresponding to reduced inside diameter of the bearing tube (24).

59. In Re claim 39, the bearing (3) of Fujinaka depicted in Figure 8 illustrates that its inner contact points with the shaft (4) are located on the outside portion, and have an enlarged inner diameter in the middle where it is not in contact with the shaft.

60. In Re claim 40, the contact areas between the shaft (4) and the bearing (3) are outside the contact area between the bearing (3) and tube (24).

61. In Re claim 41, Horng discloses that shaft (31) has a free end facing away from the fan wheel (3), and a closure member (14) as described in claim 1.

62. In Re claim 42, the arrows in Figure 4 of Hsieh clearly imply a supply of lubricant.

63. In Re claim 43, Hsieh discloses a spherical end which reads on the tracking cap. Horng also discloses an end of the shaft that reads on the tracking cap, and a planar surface (running surface) that bears the shaft, the surface is in the cover/closure member.

64. In Re claim 44, Hsieh as applied to Claim 1 discloses all the claimed limitations.

65. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Horng (US Patent 6,498,412 B2), Joachimi et al (PG Pub US 20030130381 A1) and Ootsuka et al (US Patent 5,264,748 A), and further in view of Horng et al (US Patent 6,819,021 B1) and Schafroth et al (PG Pub US 20020060954 A1)

66. In Re claim 6, Hsieh, Horng, Fujinaka, Joachimi et al and Ootsuka et al as applied to claim 5 discloses all the claimed limitations except for the bearing tube consists essentially of metal and is epilam coated on its side pressed into the flange opening.

67. Nevertheless, Horng et al discloses "The axle tube 11 is preferably made of metal" in Column 1, Lines 33-34. Further, Schafroth et al discloses in Paragraph [0053] that the meshing of parts can be epilamized.

68. It would have been obvious to a person having ordinary skill in the art at the time of the invention to make the bearing tube of Hsieh from metal as suggested by Horng et al and to apply a coating of epilam as taught by Schafroth et al to the meshing exterior of the bearing tube of Hsieh modified by Ootsuka et al for the purpose of electrically insulating the tube from the stator since the tube is in contact with the stator (Paragraph [0053] of Schafroth et al states that epilam is a good insulator).

69. Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Alex et al (US Patent 6,756,714 B2)

70. In Re claims 10 and 11, Hsieh and Fujinaka as applied to claim 1 discloses all the claimed limitations except for the free end with the tracking cap is supported by a surface that is a depression and equipped with a lubricant.

71. Nevertheless, Alex et al discloses a free end of shaft (22) with a tracking cap (portion under the retainer 23) supported by a surface (Column 4, Lines 21-22: "...distal end of shaft 22 being rotatably supported by the support 35") that is a depression (15 or 35), and equipped with a lubricant (Column 4, Lines 50-52: "...allow flowing of the lubricating oil back to a space between a bottom of the oily bearing 34 and the support 35")

72. It would have been obvious to a person having ordinary skill in the art at the time of the invention to further modify the closure arrangement of Hsieh to incorporate a support surface depression with a lubricant as taught by Alex et al for the purpose of reducing wear due to friction between stationary and rotating parts.

73. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and further in view of Chuang (US Patent 6,520,476 B1)

74. In Re claim 13, Hsieh and Fujinaka as applied to Claim 12 discloses all the claimed limitations except for the spreading member (depicted) deflecting the latching member in the RADIAL direction.

75. Nevertheless, Chuang discloses in Figures 5 and 6, a resilient member (11) that is deflected in the radial direction upon installation of shaft (3)

76. It would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute the resilient member of Hsieh by the resilient element

structure of Chuang so the element is deflected in radial direction as taught by Chuang when the shaft is inserted, for the purpose of easy access to the interior of the bearing tube.

77. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Alex et al (US Patent 6,756,714 B2) and further in view of Horng et al 2 (US Patent 6,414,411 B1)

78. In Re claim 14, Hsieh, Fujinaka and Alex et al as applied to claim 10 discloses all the claimed limitations except for the tracking cap acted on by magnet force urging in the direction towards the closure arrangement.

79. Nevertheless, Horng et al 2 discloses in Column 2, Lines 64-65: "The permanent magnet on the rotor 3 and the balance plate 11 attract each other"

80. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the part of the flange of Hsieh that is facing the magnet of the rotor so there is an attraction between the flange and the magnet on the rotor as taught by Horng et al 2 for the purpose of stable rotation of the shaft (Column 3, Lines 14-15 of Horng et al 2).

81. Alternatively, Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and further in view of Chuang (US Patent 6,520,476 B1)

82. In Re claims 15 and 16, Hsieh and Fujinaka as applied to Claim 1 discloses all the claimed limitations except for the closure arrangement implemented as a plug mounted in an opening of the bearing tube in a liquid tight manner.

83. Nevertheless, Chuang discloses in Figures 5 and 6, a plug (1) that closes the bearing tube (2) in a liquid tight manner because it houses lubricant (see abstract).

84. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the casing (102) of Hsieh to incorporate the plug of Chuang for the purpose of easy access to the lubricant reservoir.

85. Claims 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and further in view of Gruber et al (US Patent 4,783,608 A)

86. In Re claim 20, Hsieh and Fujinaka as applied to claim 1 discloses all the claimed limitations except for a lamination stack, stator winding coils and a rigid electrical conductor extending parallel to rotation axis as claimed.

87. Nevertheless, Gruber et al discloses a lamination stack (12) with stator winding (Column 3, Line 18) and a rigid electrical conductor (18) extending parallel to rotation axis as depicted in Figure 1.

88. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the stator configuration of Hsieh to incorporate the rigid electrical conductor as taught by Gruber et al for the purpose of providing increased resistance to vibration because a rigid conductor is less prone to damage (from flexing) than a non rigid conductor.

89. In Re claim 21, Gruber et al discloses an outwardly protruding flange (17) with an orifice as depicted in Figure 1 for the passage of the electrical conductor (18).

90. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and further in view of Horng et al 2 (US Patent 6,414,411 B1)

91. In Re claim 22, Hsieh, and Fujinaka as applied to claim 1 discloses all the claimed limitations except for the tracking cap acted on by magnet force urging in the direction towards the closure arrangement.

92. Nevertheless, Horng et al 2 discloses in Column 2, Lines 64-65: "The permanent magnet on the rotor 3 and the balance plate 11 attract each other"

93. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the part of the flange of Hsieh that is facing the magnet of the rotor so there is an attraction between the flange and the magnet on the rotor as taught by Horng et al 2 for the purpose of stable rotation of the shaft (Column 3, Lines 14-15 of Horng et al 2).

94. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US Patent 6,318,976 B1) in view of Fujinaka (PG Pub US 20030113045 A1) and in view of Horng (US Patent 6,498,412 B2) and Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A) and Alex et al (US Patent 6,756,714 B2)

95. In Re Claim 34, Hsieh, Fujinaka, Horng, Joachimi et al, Ootsuka et al as applied to Claim 29 discloses all the limitations except for a depression in the cover that forms a bearing for the shaft. Alex et al as applied to Claim 10 discloses a depression in the cover that forms the bearing for the shaft. It would have been obvious to a person having ordinary skill in the art at the time of the invention to form a depression in the cover of Horng as suggested by Alex et al for the purpose of forming a bearing for the shaft.

Response to Arguments

96. Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DNYANESH KASTURE whose telephone number is (571)270-3928. The examiner can normally be reached on Mon-Fri, 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272 - 7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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